CLAIMS

1. Electrical power transmission network, comprising:
- interconnecting nodes of the network and connecting lines between the said nodes;
- a coaxial superconducting cable with which is associated a first reactance, connected between two nodes of the said network;
characterized in that it also comprises at least one inductive element, with which is associated a second reactance, connected in series with the said coaxial superconducting cable.

2. Network according to Claim 1, characterized in that the sum of the said first reactance and the said second reactance is substantially equal to a third reactance whose value is substantially equal to the reactance of a conventional cable suitable for such a connection.

3. Network according to Claim 1, characterized in that the said at least one inductive element comprises a superconducting cable.

4. Network according to Claim 1, characterized in that the said at least one inductive element comprises a core.

5. Network according to Claim 1, characterized in that the said at least one inductive element is located at one end of the said coaxial superconducting cable.

6. Network according to Claim 1, characterized in that the said at least one inductance comprises two parts, of which one is located at one end of the said superconducting cable and the other is located at the opposite end.

7. Network according to Claim 1, characterized in that the said coaxial superconducting cable is of the multiple-phase type.

8. Network according to Claim 7, characterized in that it comprises at least one inductive element connected in series with each phase of the said coaxial superconducting cable.

9. Network according to Claim 1, characterized in that the said coaxial superconducting cable comprises a support of conducting material.

10. Network according to Claim 1, characterized in that the said coaxial superconducting cable comprises a support of composite material.

11. Method for installing in an electrical power transmission system a connection using a coaxial superconducting cable, characterized in that it comprises the following steps:

- determining the reactance of a conventional cable suitable for the said connection;
- installing the said coaxial superconducting cable having a predetermined reactance;
- increasing the reactance of the said coaxial superconducting cable, in such a way that the said reactance of the said superconducting cable is substantially equal to the reactance of the said conventional cable.

12. Method according to Claim 11, characterized in that the step of increasing the reactance of the said coaxial superconducting cable comprises the step of connecting an inductive element in series with the said coaxial superconducting cable.

13. Method according to Claim 12, characterized in that the said inductive element is a superconductor.

14. Method according to Claim 11, characterized in that it comprises the step of associating with the said coaxial superconducting cable a parallel conducting path in such a way that the maximum temperature reached by the said coaxial superconducting cable is lower than the minimum temperature between the critical temperature of the superconducting material and the boiling point of the coolant fluid at the minimum working pressure of the fluid.

15. Method for replacing, in an electrical power transmission system, a conventional cable connection with a coaxial superconducting cable connection, comprising the following steps:

- removing the said conventional cable;
- installing the said coaxial superconducting cable;

characterized in that it additionally comprises the step of increasing the reactance of the said coaxial superconducting cable.

16. Method according to Claim 15, characterized in that it additionally comprises the step of:

- determining the reactance of the said conventional cable;
- increasing the reactance of the said coaxial superconducting cable in such a way that the reactance of the said coaxial superconducting cable is substantially equal to the reactance of the said conventional cable.

17. Method according to Claim 15, characterized in that the step of increasing the reactance of the said coaxial superconducting cable comprises the step of connecting an inductive element in series with the said coaxial superconducting cable.

18. Method according to Claim 17, characterized in that the said inductive element comprises superconductors.

19. Method according to Claim 15, characterized in that it comprises the step of associating with the said coaxial superconducting cable a parallel conducting path in such a way that the maximum temperature reached by the said coaxial superconducting cable is lower than the minimum temperature between the critical temperature of the superconducting material and the boiling point of the coolant fluid at the minimum working pressure of the fluid.

20. Thermally insulated terminal for connection between a multiple-phase cable and an electrical installation at ambient temperature, the said cable comprising, for each phase, at least one coaxial unit having a phase superconductor, an interposed layer of electrical insulation and a coaxial return superconductor, and also thermal control means for

maintaining the said superconductors of each of the said coaxial units in the superconducting state,
the said terminal being characterized in that it comprises an inductive element connected in series with each phase superconductor.

21. Terminal according to Claim 20, characterized in that it comprises:

- at least one casing,
- cooling means,
- a live current lead for each phase superconductor, having a corresponding phase connector for connection to the said installation at ambient temperature,

the said current lead being provided with a resistive conductor between the phase superconductor and the said connector of the current lead, the areas of connection between the said resistive conductors and the said phase superconductors being located inside the casing.

22. Terminal according to Claim 20, characterized in that it comprises:

- a single return current lead provided with a single resistive return conductor, with an upper end connected to a return connector for connection to the installation at ambient temperature;
- connecting means made from a superconducting material between the said return superconductors and the said single resistive return conductor,

the area of the junction between the said connecting means made from a superconducting material and the said single resistive return conductor, and at least the said connecting means between the return superconductors and the said single resistive conductor, being inside the casing and being at a temperature below the critical temperature corresponding to the superconducting state owing to the presence of the said cooling means.